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**Task 1 - Energy auditing a computer system & recommend how sustainability can be integrated into an upgrade**



Instruction

• Gather information to prepare the installation of an energy measuring device on a computer system

• Prepare for the installation of the device

• Configure and test the device

• Complete and document installation and test results

• Evaluate opportunities to integrate sustainable ICT projects and reduce energy consumption

**Project Resources**

Current Cost EnviR Energy Monitor

Warning: Installation is simple yet if you are in Australia, for liability reasons it is required to be carried out by a qualified electrician when in in a power switchboard.

* <http://www.smartnow.com.au/installinstructions.php>
* <http://www.smartnow.com.au/current_cost_bridge.php>

**Theory**

Complete the following notes:

1. Q: Does the Current Cost EnviR Energy Monitor comply with Electrical Safety Standards?

ANSWER: Yes, it does comply with the Electrical Safety Standards.

1. Advise how you prepared the installation of Current Cost EnviR Energy Monitor

ANSWER: Connect current sensor clamp and transmitter unit. If the unit is a battery powered transmitter insert batteries & connect the current sensor clamp to input electrical wire.

1. Advise how you configured and tested the Current Cost EnviR Energy Monitor

ANSWER: Connect clamp to the live wire and connect transmitter unit. Turn on the transmitter unit. Connect the transmitter unit to Computer & download the data. Evaluate the results to generate a report.

1. Advise how you could document the installation and energy audit

(see <http://my.currentcost.com/>)

ANSWER: Evaluate the power consumption while testing under different conditions & loads. All equipment used in the environment that is being tested should be included in the test. We tested a PC, Thin Client, Web Client & a Server Black box.

**Practicum**

* **Identify power consumption of a computer system under different operating conditions using the Current Cost EnviR Energy Monitor and appropriate power lead or similar energy meter.**
* **Recommendations on upgrading computer system.**

1. Record power consumption and notes e.g. range, variability, operating conditions:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Condition** | **PC** | **Thin Client** | **Web Client** | **Server Black box** |
| **OFF** | 17 | 0.3 | 0.27 | 19 |
| **MAX BOOT** | 51 | 3.5 | 5.1 | 42 |
| **IDLE** | 42 | 3.2 | 3.4 | 42 |
| **Wordprocessing** | 36 | 3.3 | 5.1 | 44 |
| **Spreadsheets** | 36 | 3.3 | 5.1 | 44 |
| **Web browsing**  <http://news.bbc.co.uk/2/hi/programmes/click_online/default.stm> | 45 | N/A | 4.6 | N/A |
| **Low level music**  <http://grooveshark.com/#/s/Fall+At+Your+Feet/3KIZB0?src=5> | 44 | N/A | 6.7 | N/A |
| **Low level video**  <http://www.joost.com/39w1yk49/#/?video_info=33p1yw1t> | 57 | N/A | 5.2 | N/A |
|  | 17 | 0.3 | 0.27 | 19 |

1. Evaluate the extent to which sustainability could be integrated into an upgrade of the computer system. Advise your recommendations:

Depending what the upgrade was for the integration of sustainability may differ. Some applications require a lot of processing power a good example is media applications such as audio & video editing, recording & rendering or graphic design. In this case we could integrate sustainability not into the PC itself but maybe in the peripherals such as the monitor, keyboard, mouse, printers & other accessories.

Where in some cases only small processing power is needed in order for an employee to complete their designated tasks in a suitable time such as sending emails, data entry to a database, word processing Thin Clients can be great for sustainability.

My recommendation is that each & every environment would have to be evaluated for its needs before you can just assume they could use a thin client or tablet pc.